

## INSPECTION PROTOCOL - FOSSIL STEAM PLANT

Equipment/Component	Damage Mechanism	Inspection Techniques
Main Steam Piping (1)	<ul style="list-style-type: none"> <li>- Creep</li> <li>- Fatigue</li> <li>- Creep - Fatigue</li> </ul>	<ul style="list-style-type: none"> <li>- Dimensional</li> <li>- Wet Fluorescent MT</li> <li>- Automated UT</li> <li>- Replications</li> <li>- Hardness</li> </ul>
Hot Reheat Piping (1)	<ul style="list-style-type: none"> <li>- Creep</li> <li>- Fatigue</li> <li>- Creep - Fatigue</li> </ul>	<ul style="list-style-type: none"> <li>- Dimensional</li> <li>- Wet Fluorescent MT</li> <li>- Automated UT</li> <li>- Replications</li> <li>- Hardness</li> </ul>
Cold Reheat Piping (1)	Thermal Fatigue Cracking	<ul style="list-style-type: none"> <li>- Wet Fluorescent MT</li> <li>- Automated UT</li> </ul>
Feedwater Piping & Assoc. Drains (1)	Flow Accelerated Corrosion	<ul style="list-style-type: none"> <li>- Computed RT</li> <li>- UT Grid Mapping</li> </ul>
Deareator & Associated Piping (1)	<ul style="list-style-type: none"> <li>- Fatigue Cracking</li> <li>- Thermal Fatigue Cracking</li> <li>- Flow Accelerated Corrosion</li> </ul>	<ul style="list-style-type: none"> <li>- Wet Fluorescent MT</li> <li>- UT Grid Mapping</li> <li>- Computed RT</li> </ul>
Attemperator Piping (1)	<ul style="list-style-type: none"> <li>- Liner Cracking</li> <li>- Downstream Quench Cracking</li> <li>- FAC (Feedwater Supply)</li> </ul>	<ul style="list-style-type: none"> <li>- Remote Visual</li> <li>- Computed RT</li> <li>- UT Grid Mapping</li> </ul>
Drums (2)	<ul style="list-style-type: none"> <li>- Ligament Cracking</li> <li>- Downcomer Bore Cracking</li> <li>- Fatigue Cracking</li> </ul>	<ul style="list-style-type: none"> <li>- Direct Visual</li> <li>- Remote Visual</li> <li>- Wet Fluorescent MT</li> </ul>
High Temperature Headers (2)	<ul style="list-style-type: none"> <li>- Creep (Seams &amp; Sockets)</li> <li>- Fatigue (Seams &amp; Sockets)</li> <li>- Creep-Fatigue</li> <li>- Ligament Cracking</li> <li>- Oxide Cavitation (Sockets)</li> </ul>	<ul style="list-style-type: none"> <li>- Wet Fluorescent MT</li> <li>- Remote Visual</li> <li>- Automated UT</li> <li>- Volumetric UT (Sockets)</li> <li>- Replications</li> <li>- Hardness</li> </ul>
Water Touched Tubing (including Supply & Link Piping) (1)	Corrosion Fatigue Cracking	<ul style="list-style-type: none"> <li>- Remote Visual Inspection</li> <li>- Computed RT</li> </ul>
Air Receivers (1)	<ul style="list-style-type: none"> <li>- Corrosion</li> <li>- Inoperable Relief Valve</li> </ul>	<ul style="list-style-type: none"> <li>- Visual</li> <li>- Ultrasonic Thickness</li> </ul>
High Pressure Air Piping (1)	<ul style="list-style-type: none"> <li>- Corrosion</li> </ul>	<ul style="list-style-type: none"> <li>- Computed RT</li> <li>- UT Thickness</li> </ul>
Steam Cooled Boiler Tubing (2)	<ul style="list-style-type: none"> <li>- Thermal Fatigue</li> <li>- Coal Ash Corrosion</li> <li>- Erosion (sootblower, etc)</li> <li>- Oxide Build-up</li> <li>- Mechanical (Fretting, etc)</li> </ul>	<ul style="list-style-type: none"> <li>- UT Thickness</li> <li>- UT Oxide Measurements</li> <li>- Comprehensive Visual</li> </ul>

(1) - Inspections recommended primarily due to Safety related concerns

(2) - Inspections recommended primarily due to Reliability related concerns